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Children at Work: Prevention of Occupational Injury and Disease

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Because children are an isolated population that generally lacks a collective political voice, it is up to the rest of society to look after their well-being. The grim economic circumstances that plague impoverished nations around the world have resulted in many young children having to work to help their families survive. Often, these children have no choice but to work in dangerous places and under generally appalling conditions. Even in wealthy countries like the United States, the problems associated with child labor are a legitimate threat to our single most important investment for the future—the safety and health of our children. © 1993 Wiley-Liss, Inc.*

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INTRODUCTION

"I am for children first, because I am for Society first, and the children of today are the Society of tomorrow." Ben B. Lindsey, American judge, reformer, 1869–1943.

Children make up a sizable portion of the workforces of many developing countries. In Mexico, 10% of the boys 10–14 years of age work in contrast to less than 2% of the same age group in the United States [Michaels et al., 1985]. In Brazil, 16% of the boys and 6% of the girls 10–14 years of age work, and in Latin America there are more than 3 million children under 15 in the active workforce [Michaels et al., 1985].

Economically active children, ages 10–14 years, make up even higher percentages of the workforces in the extremely poverty laden developing world countries.

In Nepal, in Southern Asia, children account for 57% of the workforce, in Bangladesh 52%, in Ethiopia 42.1%, and in Senegal 50.1%. Reasons for the use of child labor relate to a variety of circumstances including family poverty, migration, tradition, and lack of schools. Sometimes the children live with their employers as

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domestic help or as agriculture workers; however, quite often they simply are day or night laborers doing anything from shoe shining, waiting or bussing tables in restaurants, working as messengers, prostitutes, drug couriers, or as employees of manufacturing facilities. The children generally earn less pay, experience longer working hours, and work 7 days a week. They may also suffer more adversely than the adult worker due to their body sizes, which give them less strength, and less ability to wear adult-designed personal protective equipment. They may even have greater susceptibility to genetic damage since their cells are reproducing more rapidly [ILO, 1980, 1981, 1982, 1983]. An estimated 100 million children around the world—~ 40% of the total U.S. population—work at hard labor in hazardous and often fatal conditions [Christian Children's Fund, 1988].

The problem of child labor in the United States is not geographically isolated. It extends from the garment districts in New York City to the fast food restaurants in California to the farms of Iowa and to the fields of Arizona. It is estimated that more than 4 million children in the United States were employed in the late 1980s and that more than 1 million children 14 and 15 years of age work full- or part-time. Among affluent countries around the world, the United States has the highest rate of working children and also the highest work-related death rates of industrial injuries in both the under 15 and 15–24 age groups.

The Fair Labor Standards Act (FLSA) of 1938 is still the major piece of legislation that regulates youth employment. However, exclusions in the FLSA in the areas of agriculture and newspaper delivery are two of the leading sources of work-related injuries. In New York State, these two occupations have similar injury rates among youth. And in agriculture, many serious work-related injuries are incurred by youth. However, "Minors of any age may be employed by their parent or person standing in place of their parent at any time in any occupation on a farm owned or operated by their parent or person standing in place of their parent," [Pollack et al., 1990].

The Department of Labor (DOL), in a massive 1990 inspection sweep of workplaces in several states, uncovered more than 15,000 violations of child labor laws [DOL, 1990]. Another DOL study found that the number of illegally employed children jumped 128%, from 9,800 in 1985 to 22,500 in 1989 [GAO, 1990]. Overall, the number of federal child labor law violations has risen sharply over the past decade, from 10,000 in 1983 to over 40,000 in 1990 [American Youth Work Center, 1990].

SWEATSHOPS ARE BACK

Americans thought the sweatshop problem was eliminated back in 1938 when the Fair Labor Standards Act was established. Today, however, an alarming number of children—particularly those of immigrant families—spend their days working in sweatshops instead of going to school. This is particularly a problem in inner urban areas such as in New York City.

Unfortunately, the children of immigrants face other occupational hazards besides those in the sweatshops. Migrant farm workers often are forced to bring their children along to help with the chores in the field, and these kids ultimately wind up with their faces covered with dirt—dirt that is contaminated with harmful pesticides.

Many migrant and seasonal farm workers (and their children) are not protected

electrical wiring to a conveyer belt when he touched an energized conductor and was electrocuted [Suruda and Halperin, 1991].

The fast food business is among the fastest growing industries and one of the largest employers of youth in the United States. Minor lacerations and burn are common hazards in these establishments [Pollack et al., 1990]. Several years ago NIOSH investigated the death of an 18-year-old worker who was electrocuted after he had mopped the floor and then tried to plug in the fryer; his finger touched a prong. The irony of this death was that it could have been prevented; the manager knew CPR, the voltage was 110, but no one could locate the circuit breaker, and thus CPR could not be administered in time. We issued an Alert on this incidence and found it not to be an isolated case. Our Alert is now required to be posted by many states in fast food establishments as a part of the regulations of the state health department's restaurant inspection criteria [NIOSH, 1985].

Youth exposures to pesticides and herbicides are common in agriculture and lawn care [Pollack et al., 1990]. It is estimated that 4,000 adolescents between 10 and 19 years of age experience work-related, nonfatal, farm-related injuries each year; an additional 186 are killed [Runyan and Gerken, 1989].

The Supplementary Data System (SDS) of the Bureau of Labor Statistics (BLS) was examined for 1980–1983 to identify all current claims for injuries and illnesses occurring in 1980 in persons under the age of 18. In the 24 states included in the study, 23,823 claims were reported for persons less than 18 years old in 1980. Rates of injuries in 16- and 17-year-olds were 12.6 per 100 full-time male workers and 6.6 for females [Schober et al., 1988].

Using data from the National Electronic Injury Surveillance System (NEISS), the rate of injury (in 1982) for 18- and 19-year-olds was higher than all other age groups, followed by the 16- and 17-year-olds. The rate of occupational injures in the age group 16–17 was 8.2 per 100 full-time male workers and 3.0 for females. [Schober et al., 1988]. However, information on full-time employment for youth is problematic since most employment is part-time in nature.

PREVIOUSLY STATED RECOMMENDATIONS

Better enforcement of the Fair Labor Standards Act could prevent a substantial proportion of work-related deaths in children. Coordination of investigations between OSHA, the Wage and Hour Division of the Department of Labor, and state labor departments would help achieve this goal [Suruda and Halperin, 1991].

Current bans on dangerous work need to be made more specific. Explicit and meaningful labeling and warning standards against child use of and exposure to toxic products and tools are needed to supplement fail-safe product design [Richter and Jacobs, 1991].

Joint pediatric and occupational epidemiologic surveillance groups should be set up to search for, monitor, and promote banning of the most serious work exposures for children, and also those exposures that are not as repugnant as the worst and most brutal abuses but that probably involve far larger numbers at risk. The use of public health nurses and sanitarians should be considered, and such individuals should receive training in how to search for and detect areas of hazardous work for children. Simple protocols should be used to monitor for end-organ effects and the data col-

by many of the provisions in the Fair Labor Standards Act of 1938. These children and their families are often subject to poor housing conditions and a lack of access to adequate drinking water. Their willingness to accept these conditions in exchange for very little pay makes them obvious victims of exploitation. Many of these children—much like the children in the inner city sweatshops—speak little or no English and are thus a very difficult population to track. The United Farm Workers of America estimates that 800,000 minors are working as migrant labor [United Farm Workers of America, 1991].

Overall, agriculture in general is a very dangerous industry because many kids—not just the children of migrant workers—work side by side with their parents in the fields. It has been estimated that 300 children are killed on U.S. farms each year, and at least 5,000 more are seriously injured [National Coalition for Agricultural Safety & Health, 1988].

The entire country was horrified and amazed by the story of John Thompson, the 18-year-old North Dakota boy who lost both his arms in a tractor power assembly and then courageously phoned for help by sticking a pencil in his mouth to dial [Reuters, 1992]. Two weeks after this tragedy, a 13-year-old boy, Scott Scrivner of Arkansas, had his hands mangled in a conveyor that processes food for chickens [Chicago Tribune, 1992]. And more recently, a six-year-old Wisconsin boy, Michael Conoboy, lost both his arms while riding on the long metal arm of a farm field irrigation system [Reuters, 1992].

Some youth are subject to late working hours during school nights that impedes their education. In 1987, several high school students employed by a restaurant in a small town near Morgantown, West Virginia (home of two divisions of NIOSH), quit after having tried unsuccessfully to negotiate (accompanied by their parents) with the manager to stop keeping them past midnight on school nights.

An analysis of Occupational Safety and Health Administration (OSHA) fatality investigations for 1984–1987 found 104 work-related deaths in children 17 years old and younger. Fourteen (13%) of the occupational fatalities occurred to children aged 15 and under [Suruda and Halperin, 1991].

These 104 occupational child deaths represent a minimum number of fatalities because OSHA does not investigate work-related homicides, most transportation incidents, and deaths in industries regulated by other federal agencies. These OSHA identified deaths were matched against the National Traumatic Occupation Fatalities (NTOF) surveillance system, maintained by the Division of Safety Research of the National Institute for Occupational Safety and Health (NIOSH), for 16- and 17-year-olds for the years 1984–1985. Two-and-one-half times as many deaths were identified in NTOF than by OSHA.

Forty-three (41%) of the 104 deaths occurred while children were performing work that is specifically prohibited by the FLSA, and OSHA issued safety violations in 70% of deaths. Twenty-one (68%) of the 31 deaths classified as "Industrial Vehicle and Machinery" were in violation of the FLSA. Four examples follow: (1) a 15-year-old boy was operating a bulldozer at a demolition site when he was crushed by a descending bucket arm; (2) a delivery man for a gas service with 20 employees had his 15-year-old son assist him with delivering propane when a block beneath the truck wheels came loose, causing the truck to roll backward over the boy; (3) a 15-year-old boy was employed as a tractor driver at a sanitary landfill when the tractor rolled downhill on top of him; and (4) a 16-year-old boy was connecting

lected, analyzed, and interpreted with an emphasis on what preventive measures are needed [Richter and Jacobs, 1991].

CURRENT EFFORTS TO COMBAT OCCUPATIONAL INJURIES TO YOUNG WORKERS

NIOSH is currently establishing a national surveillance system in cooperation with the Consumer Products Safety Commission (CPSC). A representative sample of about 90 hospitals was drawn from all such institutions in the United States to participate in the National Electronic Injury Surveillance System (NEISS). Data will be collected from the ER admission records for all occupational injuries to workers under the age of 20 starting in June of 1992.

The NEISS data are drawn from a representative sample that will allow for the calculation of national estimates of occupational injuries to youth. Furthermore, the NEISS data will encompass injuries not detected in other database because NEISS is not limited by industry, occupation, or employers with under 11 full-time employees as are most sources of data. For example, OSHA does not investigate work-related homicides, most transportation incidents, or industries regulated by other federal agencies. The Bureau of Labor Statistics maintains the Supplementary Data System, which is based on workers compensation claims. Not all states participate in this system, vast differences exist between the states as to what constitutes a compensation claim, and many youth are employed in work that is not covered by workers' compensation such as agriculture or lawn care.

To establish the NIOSH/NEISS project, the CPSC NEISS database (established in 1972) will be modified to capture all work-related injuries and collect additional occupational information such as industry, occupation, race, and the ROSH source and event codes. The reporting of work-related incidents is very timely; cases have only a 2-week lag period, which will allow for monthly surveillance of occupational injuries to youth in the United States.

This national surveillance system provides a technique for the identification of occupational exposures to youth and the calculation of age-specific, work-related injury rates for each year of age, from 15 through 19.

In addition, follow-back interviews will be conducted from a sample of the cases in NEISS. These interviews will be conducted by telephone with the parent and child to gain detailed information about the work-related injury. The interviews will include information about the number of hours usually worked by week, the work tasks commonly performed by the youth, the equipment used on the job, safety materials/training provided, and other relevant information. From this detailed follow-back study, analyses will be performed on circumstances of work-related injuries, the extent of injuries that could have been prevented by adherence to the FLSA, and the extent of injury to workers who are currently exempt from legal protection.

> "So long as little children are allowed to suffer, there is no true love in this world." Isadora Duncan, American dancer, 1877–1927.

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